REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1, 3 and 7-12 are presently pending in this application, Claims 2, 4-6 and 13 having been canceled, Claims 1, 3 and 12 having been amended by the present amendment.

In the outstanding Office Action, Claims 1, 5, 7, 8, 12 and 13 were rejected under 35 U.S.C. §102(b) as being anticipated by JP 05-311271 (hereinafter "JP '271"); Claims 1 and 6 were rejected under 35 U.S.C. §102(b) as being anticipated by JP 62-292244 (hereinafter "JP '244"); and Claims 2-4 and 9-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP '271.

Claims 1, 3 and 12 have been amended herein. These claim amendments are believed to find support in the specification, claims and drawings as originally filed, and no new matter is believed to be added thereby. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work in a joint effort to derive mutually satisfactory claim language.

Before addressing the outstanding rejections based on the cited references, a brief review of Claim 1 as currently amended is believed to be helpful. Amended Claim 1 is directed to a continuous casting method for continuously manufacturing a metal cast member and recites "driving a casting wheel with a groove formed on an external peripheral surface thereof and an endless belt put on the casting wheel so as to close the groove in a direction of casting, wherein the casting wheel and the endless belt are differentiated in temperature therebetween by heating the endless belt to a temperature of [(melting point or liquidus-line temperature of the metal) x 0.35] or above before the endless belt starts to come into contact with molten metal and cooling the casting wheel."

By driving the casting wheel as such, the casting wheel is cooled and the endless belt is heated to produce a temperature gradient in the cast member to thereby shift the final solidification portion. A larger temperature gradient causes larger shifting of the final solidification. Since the casting wheel and the endless belt are different members, large heat transfer resistance will be generated at the boundary portion thereof, and even if the continuous belt is heated, the heat will not be easily conducted to the casting wheel, which easily produces the temperature gradient. Furthermore, the endless belt is heated to a temperature according to the casting metal, i.e., a temperature of [(melting point or liquidus temperature of the metal) x 0.35] or above, thereby shifting the final solidification portion toward the belt side assuredly. The combination of cooling the casting wheel and heating the endless belt easily produces a temperature gradient, and for casting conditions, the endless belt is heated to a temperature according to the casting metal.

JP '244 is directed to a production of ingot. Nevertheless, it is respectfully submitted that JP '244 does not teach or suggest "driving a casting wheel with a groove formed on an external peripheral surface thereof and an endless belt put on the casting wheel so as to close the groove in a direction of casting, wherein the casting wheel and the endless belt are differentiated in temperature therebetween by heating the endless belt to a temperature of [(melting point or liquidus-line temperature of the metal) x 0.35] or above before the endless belt starts to come into contact with molten metal and cooling the casting wheel" as recited in amended Claim 1. On the other hand, JP '244 merely describes that the belt is held at 200 °C in Example 2 (copper casting). More specifically, in JP '244, since the side wall is heated, cooling from the side walls delays. As a result, it is believed that the final solidification region expands in the widthwise direction of the casting mold. Since the bottom wall and the side walls are integrally formed as illustrated, the heat can be easily transferred at the boundary portion thereof, which makes hard to have the temperature gradient. Under such

circumstances, it is difficult to perform accurate temperature management and solidification control, which in turn makes it difficult to shift the final solidification portion as scheduled.

In the continuous casting method as recited in Claim 1, the endless belt is heated and the cast member is cooled from the side walls. Therefore, the final solidification portion will be formed at around the widthwise central portion of the casting mold, thereby forming a final solidification portion within a range smaller than that of JP '244. Accordingly, even assuming, *arguendo*, that the depth of the final solidification portion of the present invention and that of the JP '244 are similar, the region to be removed can be smaller in the continuous casting method as recited in Claim 1. Furthermore, as discussed above, since the heat transfer resistance between the endless belt and the casting wheel, which are different members, is large, the temperature gradient can be easily produced, and it is possible to perform accurate temperature management and solidification control. By these casting conditions, the final solidification portion can be shifted as scheduled, and the removing amount can be minimized.

The final solidification portion may be shifted by differentiating the solidification speed of the molten metal; however, as mentioned above, JP '244 fails to teach or suggest the combination of cooling the casting wheel and heating the endless belt, which easily produces the temperature gradient, and heating the endless belt to a temperature depending on the casting metal. Therefore, the subject matter recited in Claim 1 is believed to be distinguishable from JP '244.

JP '271 is directed to a continuous casting method using two rolls, which is different from a casting wheel and an endless belt. Accordingly, JP '271 fails to teach or suggests "driving a casting wheel with a groove formed on an external peripheral surface thereof and an endless belt put on the casting wheel so as to close the groove in a direction of casting, wherein the casting wheel and the endless belt are differentiated in temperature therebetween

by heating the endless belt to a temperature of [(melting point or liquidus-line temperature of the metal) x 0.35] or above before the endless belt starts to come into contact with molten metal and cooling the casting wheel" and thus the subject matter recited in Claim 1 is clearly distinguishable from JP '271.

Because neither JP '271 nor JP '244 discloses the driving step as recited in amended Claim 1, their teachings even combined are not believed to render the method recited in Claim 1 obvious.

Claim 12 recites "a casting wheel with a groove formed on an external peripheral surface thereof and an endless belt put on the casting wheel so as to close the groove, the casting wheel and the endless belt being configured to driven in a direction of casting; a heating device disposed ahead of a position where the endless belt starts to come into contact with molten metal, the heating device being configured to heat the endless belt to a temperature of [(melting point or liquidus-line temperature of the metal) x 0.35] or above; and a cooling device which is configured to cool the casting wheel" and is also distinguishable from JP '271 and JP '244.

For the foregoing reasons, Claims 1 and 12 are believed to be allowable. Furthermore, since Claims 3 and 7-11 depend directly or indirectly from Claim 1, substantially the same arguments set forth above also apply to these dependent claims. Hence, Claims 3 and 7-11 are believed to be allowable as well.

In view of the amendments and discussions presented above, Applicants respectfully submit that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

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